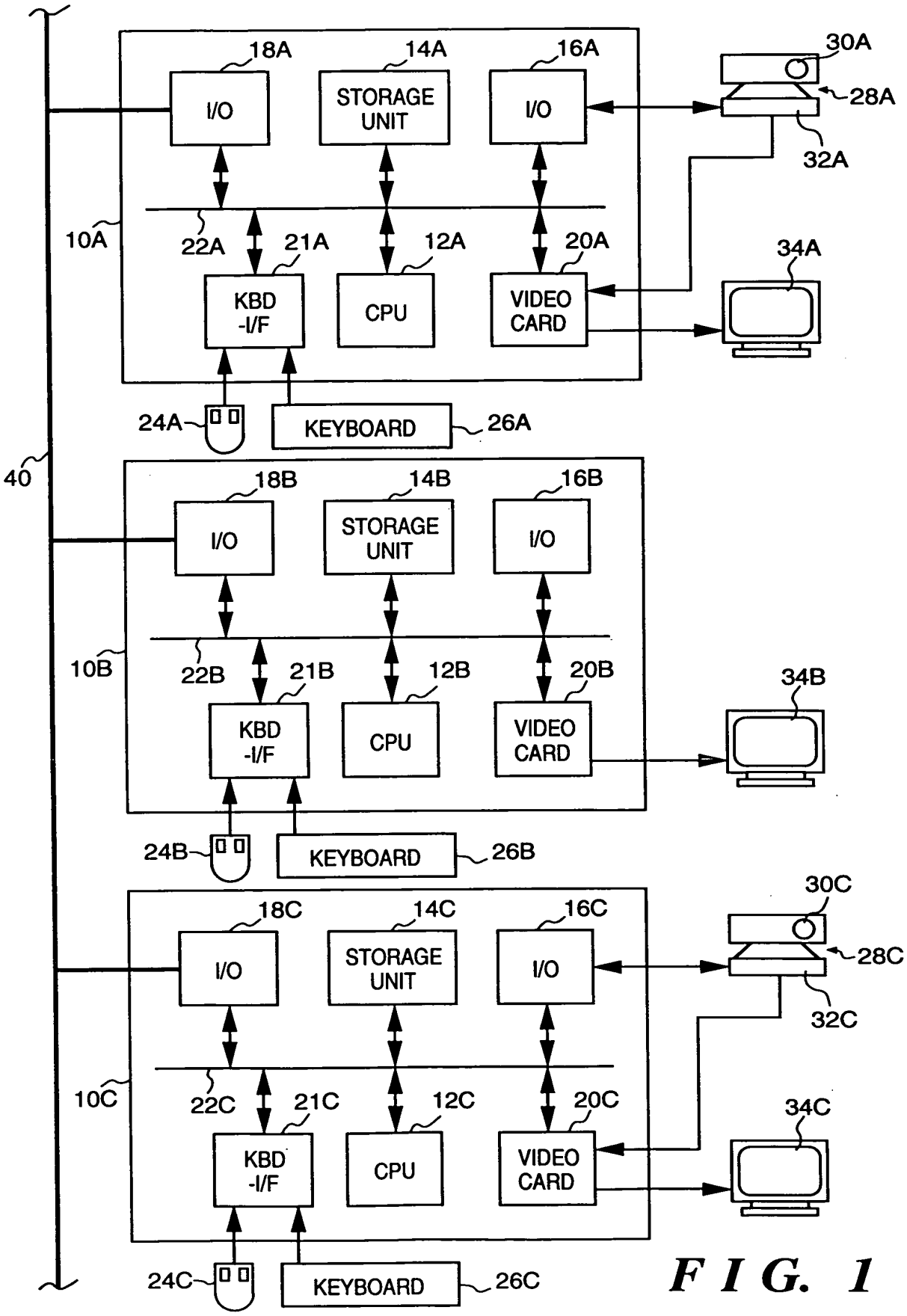


FIG. 1

FIG. 2

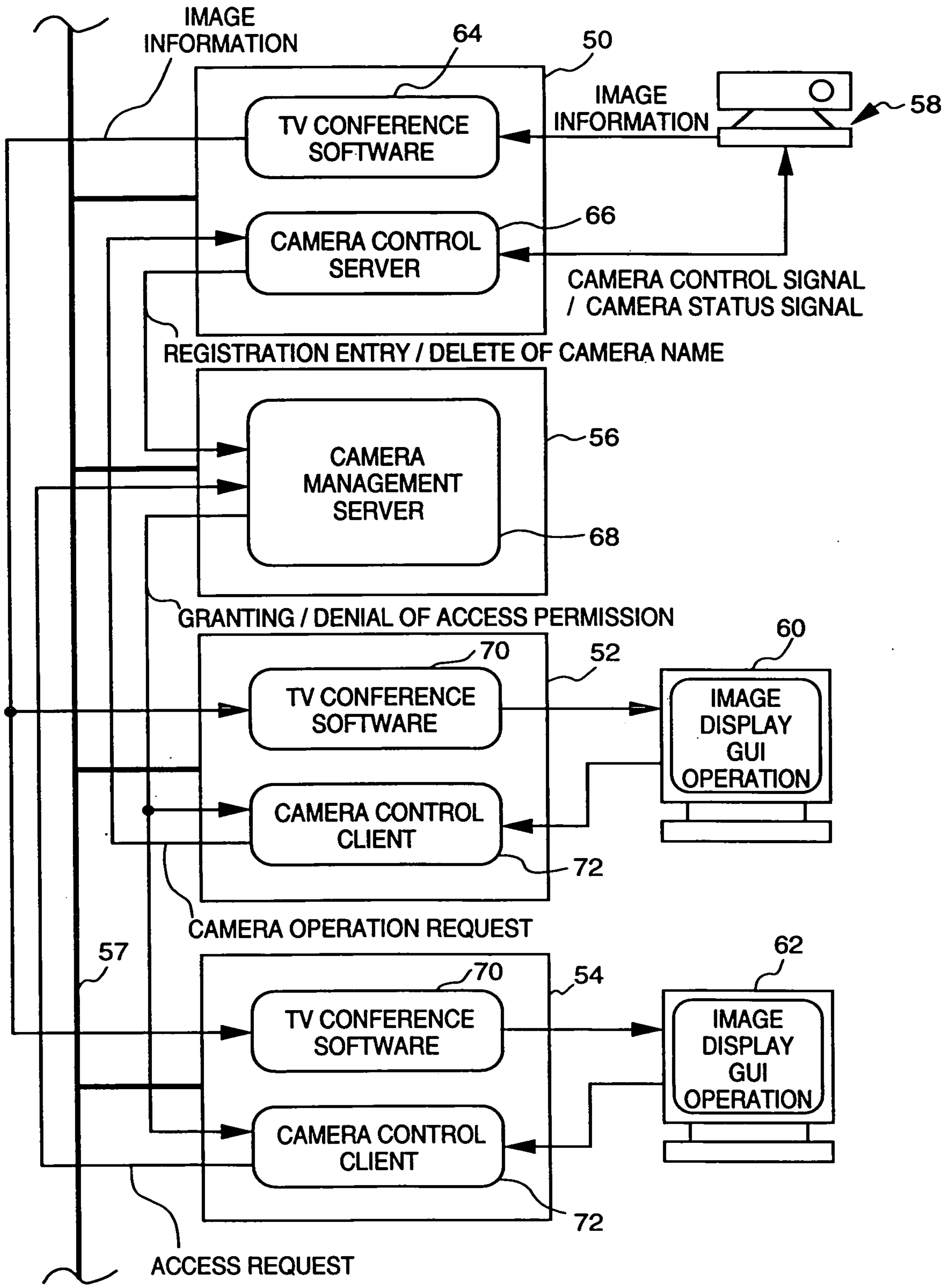


IMAGE INFORMATION
64
50
TV CONFERENCE SOFTWARE
IMAGE INFORMATION
58
66
CAMERA CONTROL SERVER
CAMERA CONTROL SIGNAL / CAMERA STATUS SIGNAL
REGISTRATION ENTRY / DELETE OF CAMERA NAME
CAMERA MANAGEMENT SERVER
56
68
GRANTING / DENIAL OF ACCESS PERMISSION
70
52
60
TV CONFERENCE SOFTWARE
IMAGE DISPLAY GUI OPERATION
CAMERA CONTROL CLIENT
72
CAMERA OPERATION REQUEST
57
70
54
62
TV CONFERENCE SOFTWARE
IMAGE DISPLAY GUI OPERATION
CAMERA CONTROL CLIENT
72
ACCESS REQUEST

F I G. 3

```
typedef struct  camera_in {
        double tilt_angle ;
        double pan_angle ;
        int zoom ;
 } camera_in;

typedef struct func_out {
        int  ret ;
} func_out ;

CLIENT * camera_open (char * host) ;
void camera_close (CLIENT * cl) ;

func_out * camera_pan_pos_1 (camera_in *, CLIENT * cl) ;
func_out * camera_tilt _ pos_1 (camera_in *, CLIENT * cl) ;
func_out * camera_zoom_pos_1 (camera_in *, CLIENT * cl) ;
```

FIG. 4

CAMERA NAME	USER NAME	POSITION	DIRECTION
host1	----------	(10, 15, 20)	(20, 35)
host2	host3	(45, 32, 20)	(0, 12)
host3	----------		
host4	host1		
⋮	⋮		

80

FIG. 5

```
typedef struct  camera_name {
        char name [MAXNAME] ;
} camera_name ;

void append_camera_list_1 (camera_name *, CLIENT * cl) ;
void delete_camera_list_1 (camera_name *, CLIENT * cl) ;
```

FIG. 6

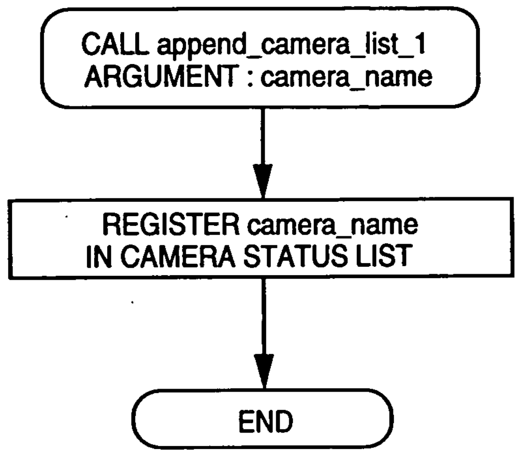

CALL append_camera_list_1
ARGUMENT : camera_name
REGISTER camera_name
IN CAMERA STATUS LIST
END

FIG. 7

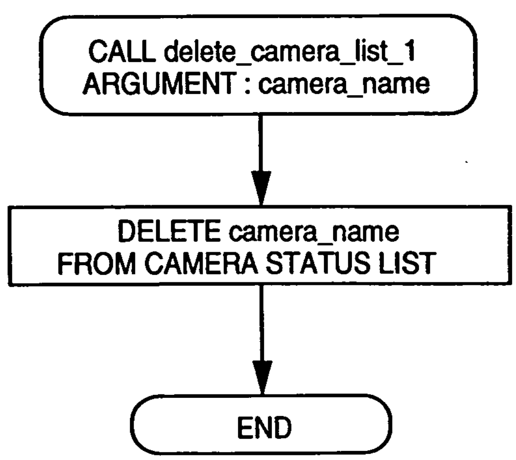

CALL delete_camera_list_1
ARGUMENT : camera_name
DELETE camera_name
FROM CAMERA STATUS LIST
END

FIG. 8

```
typedef struct  access_in {
        char target_name [MAXNAME] ;
        char user_name [MAXNAME] ;
} access_in ;

func_out  * access_begin_1 (access_in *, CLIENT * cl) ;
func_out  * access_end_1 (access_in *, CLIENT * cl) ;
```

FIG. 9

82

CAMERA NAME	USER NAME	ACCESS RIGHT
host1	host1	OK
host2	host2	----------
host3	host3	NO
host4	host4	OK
⋮	⋮	⋮

FIG. 10

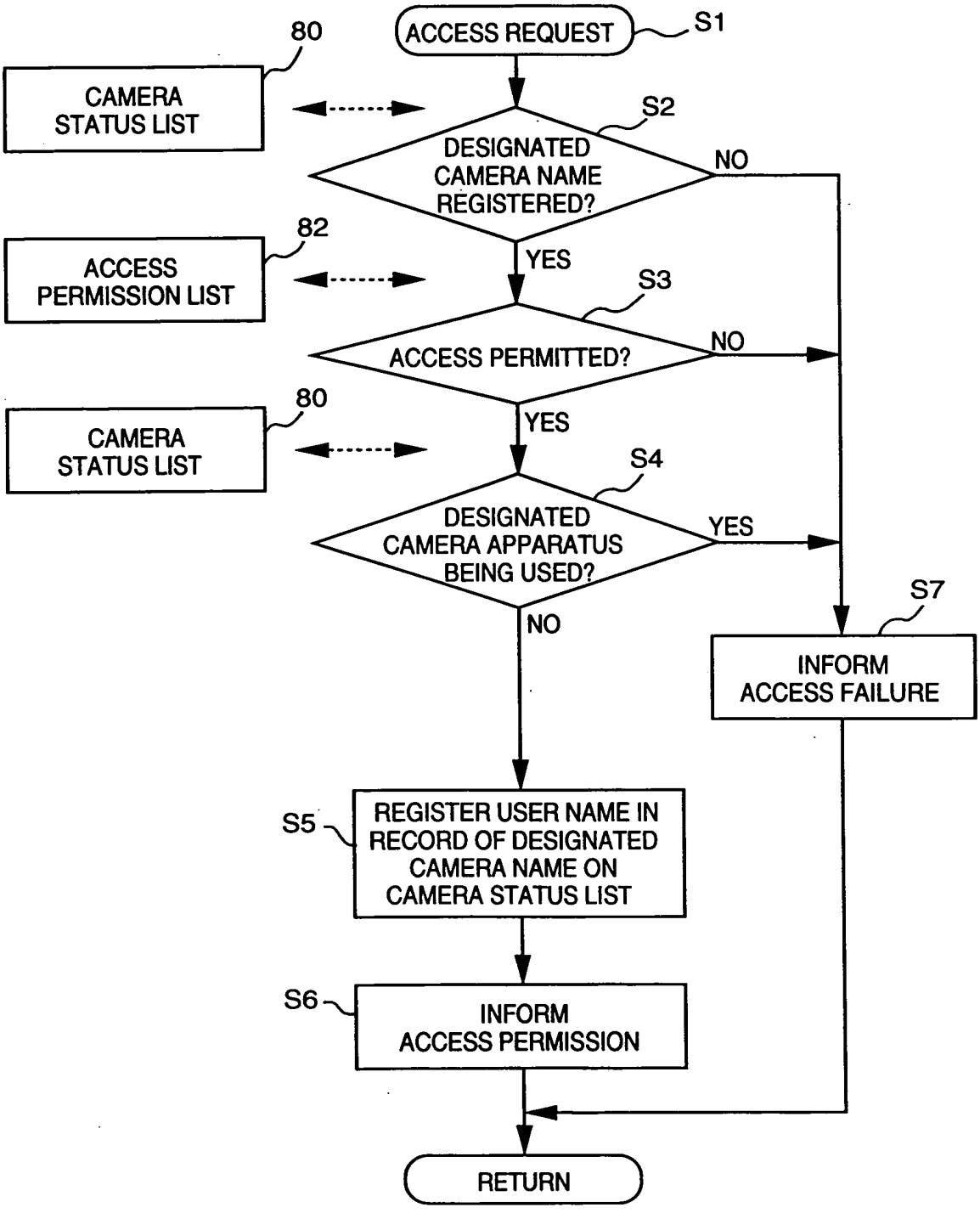
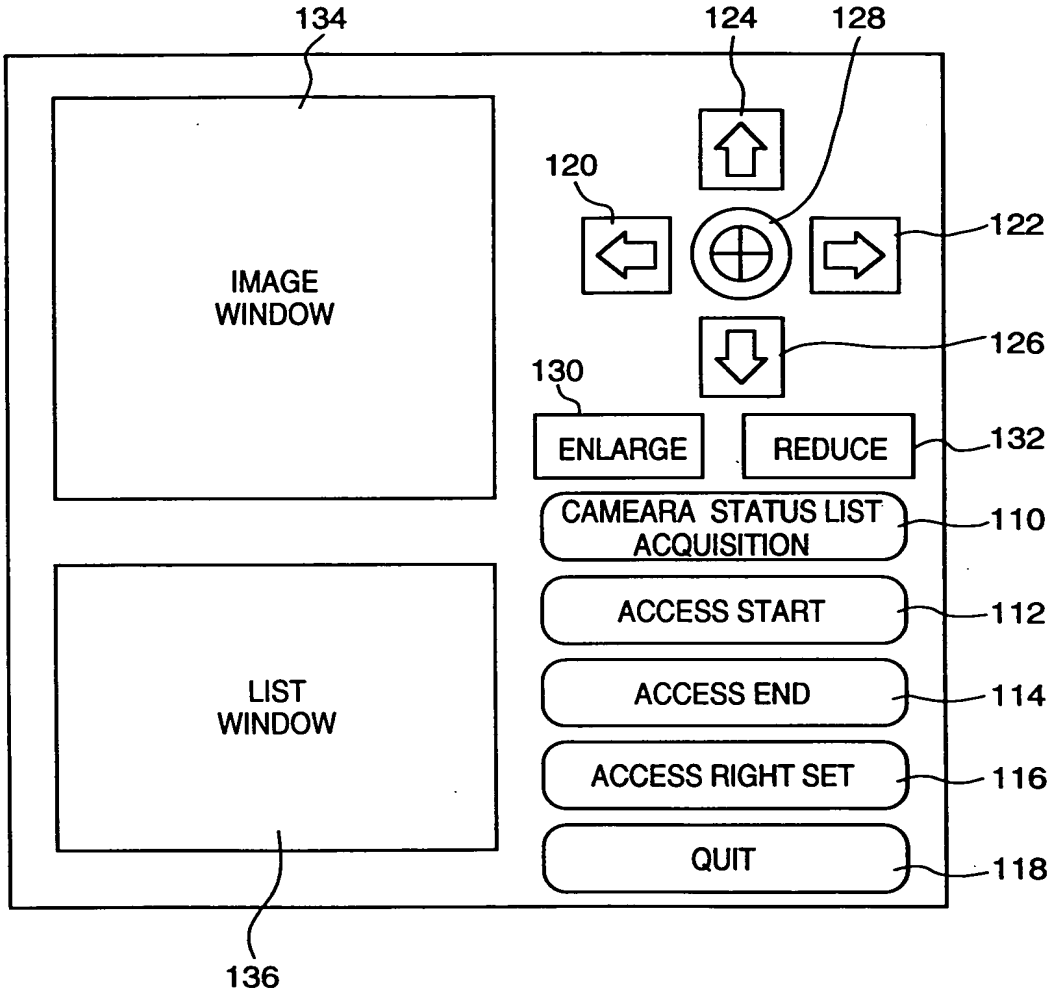

ACCESS REQUEST
S1
80
CAMERA STATUS LIST
S2
DESIGNATED CAMERA NAME REGISTERED?
NO
YES
82
ACCESS PERMISSION LIST
S3
ACCESS PERMITTED?
NO
YES
80
CAMERA STATUS LIST
S4
DESIGNATED CAMERA APPARATUS BEING USED?
YES
NO
S7
INFORM ACCESS FAILURE
S5
REGISTER USER NAME IN RECORD OF DESIGNATED CAMERA NAME ON CAMERA STATUS LIST
S6
INFORM ACCESS PERMISSION
RETURN

FIG. 11

```
typedef struct  change_in {
        char target_name [MAXNAME] ;
        char user_name [MAXNAME] ;
        int  access_mode ;
} change_in ;


func_out * change_access_mode_1 (change_in *, CLIENT * cl) ;
```

FIG. 12



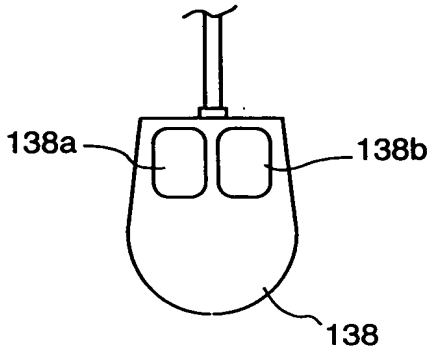


FIG. 13

MODE MANAGEMENT TABLE	
USER NAME	MODE
USER 1	1
USER 2	2
USER 3	1
⋮	⋮

FIG. 14

LIMITING RANGE MANAGEMENT TABLE			
MODE	OPERATION	UPPER LIMIT	LOWER LIMIT
3	PAN	5.0°	(–5.0)°
3	TILT	7.0°	(–7.0)°
3	ZOOM	60 mm	70 mm

FIG. 15

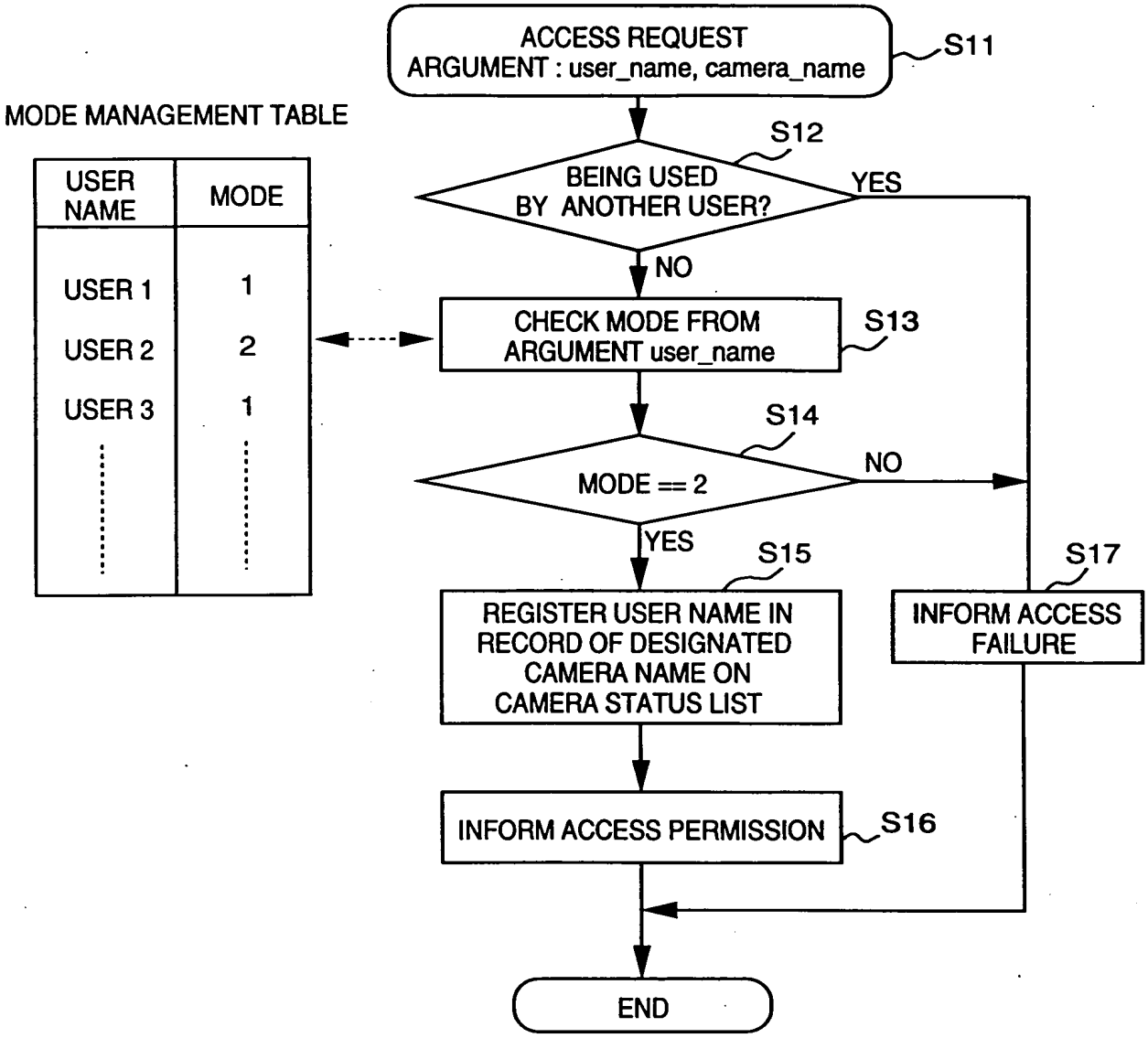

ACCESS REQUEST
ARGUMENT : user_name, camera_name
S11
MODE MANAGEMENT TABLE
USER NAME
MODE
USER 1
1
USER 2
2
USER 3
1
S12
BEING USED BY ANOTHER USER?
YES
NO
CHECK MODE FROM ARGUMENT user_name
S13
S14
MODE == 2
NO
YES
S15
REGISTER USER NAME IN RECORD OF DESIGNATED CAMERA NAME ON CAMERA STATUS LIST
S17
INFORM ACCESS FAILURE
INFORM ACCESS PERMISSION
S16
END

FIG. 16

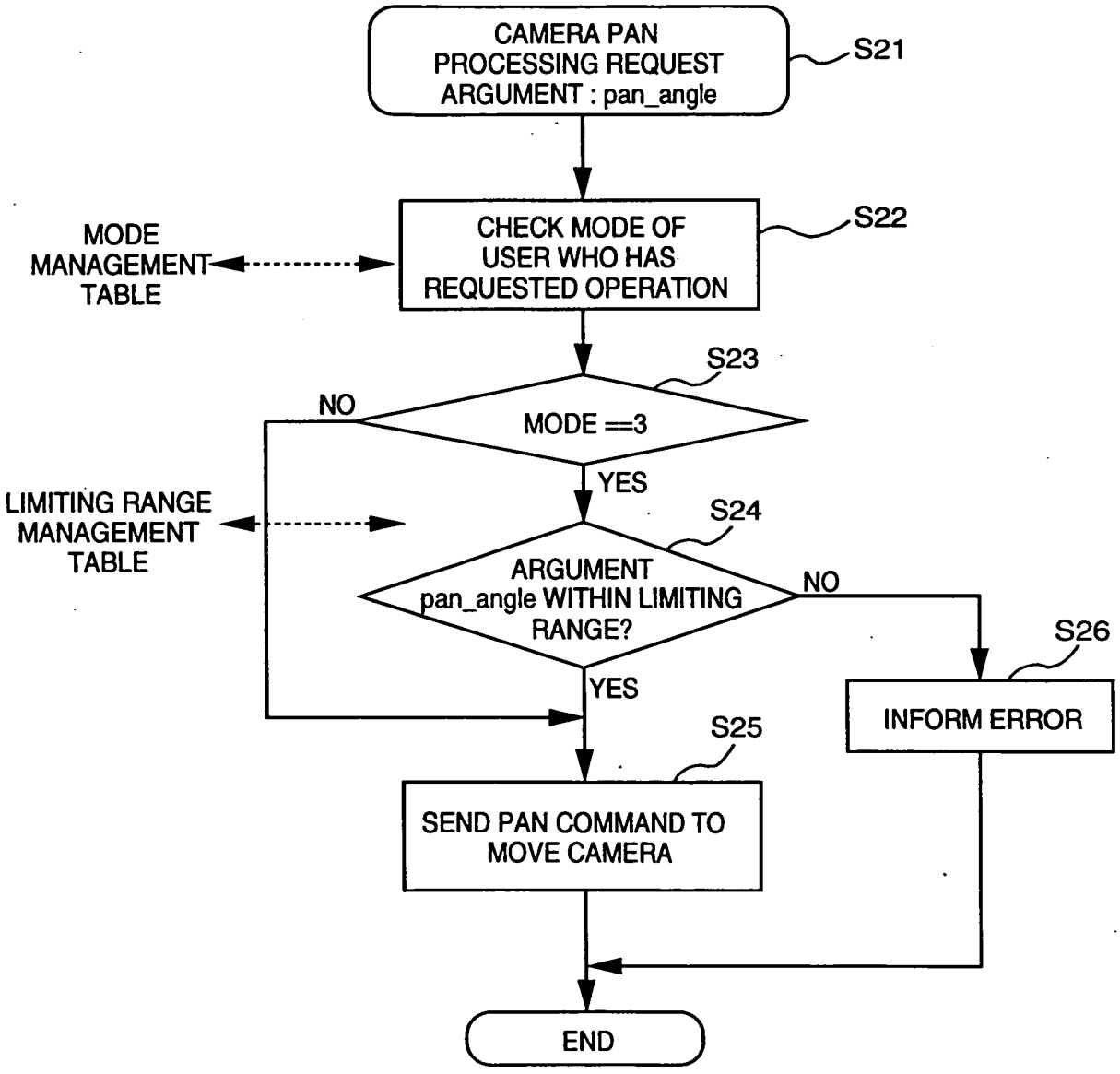
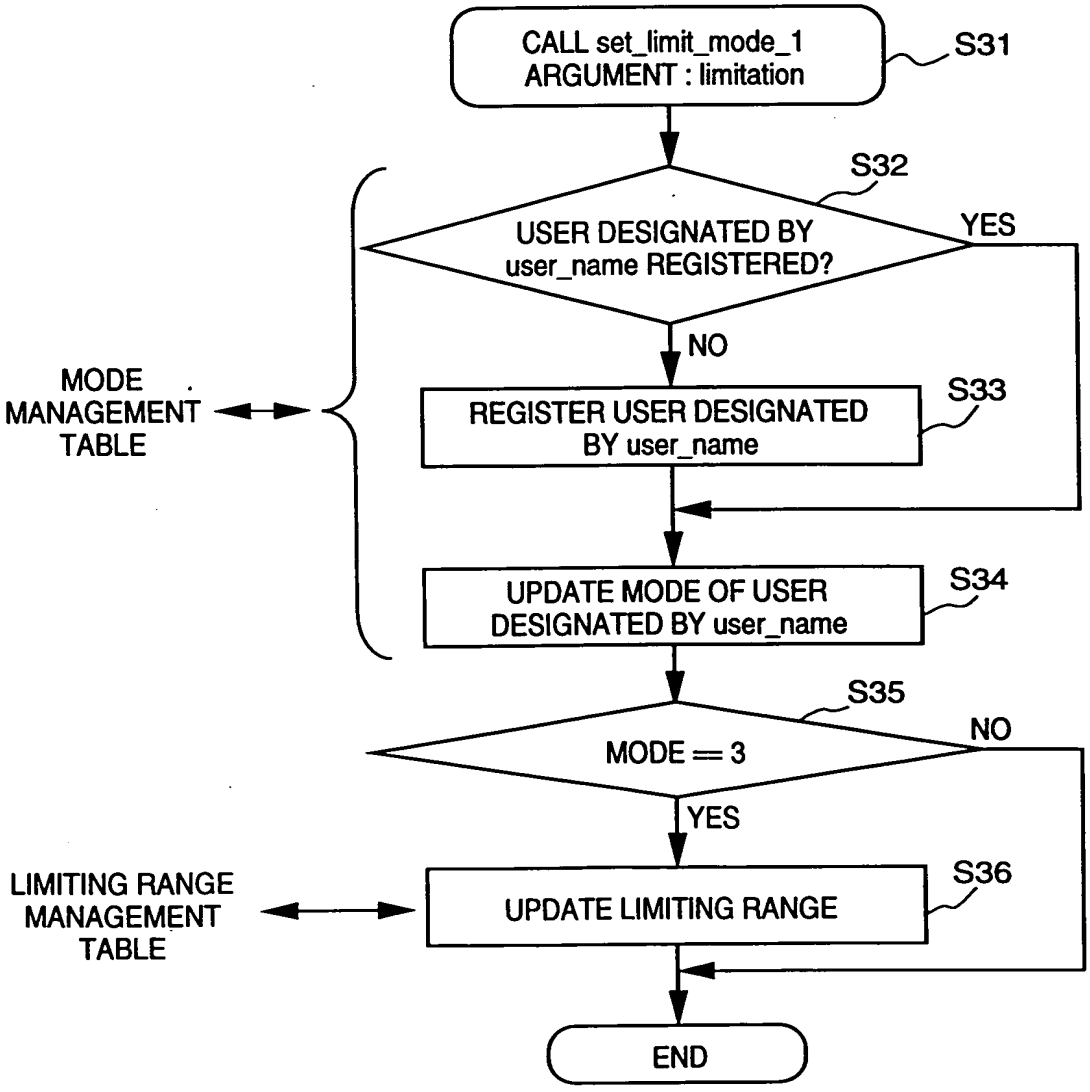

CAMERA PAN PROCESSING REQUEST ARGUMENT : pan_angle
S21
CHECK MODE OF USER WHO HAS REQUESTED OPERATION
S22
MODE MANAGEMENT TABLE
S23
MODE ==3
NO
YES
LIMITING RANGE MANAGEMENT TABLE
S24
ARGUMENT pan_angle WITHIN LIMITING RANGE?
NO
YES
S26
INFORM ERROR
S25
SEND PAN COMMAND TO MOVE CAMERA
END

FIG. 17

```
typedef struct  limitation {
        char camera_name [MAXNAME] ;
        char user_name [MAXNAME] ;
        int  limit_mode ;
        double tilte_plus_angle ;
        double tilte_minus_angle ;
        double pan_plus_angle ;
        double pan_minus_angle ;
        int  min_zoom ;
        int  max_zoom ;
} limitation ;

void set_limit_mode_1 (limitation *, CLIENT * cl) ;
```

FIG. 18



F I G. 19

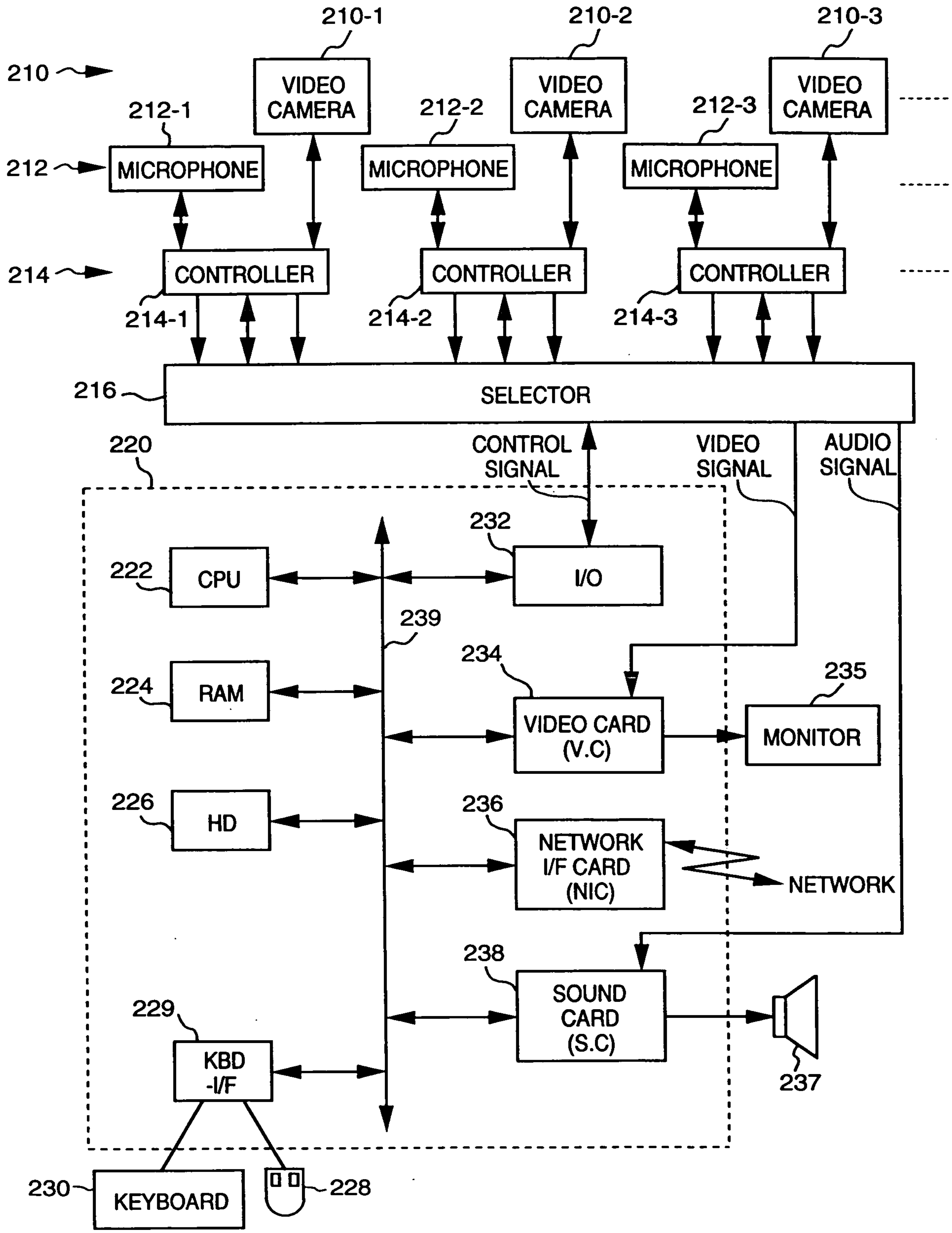


FIG. 20

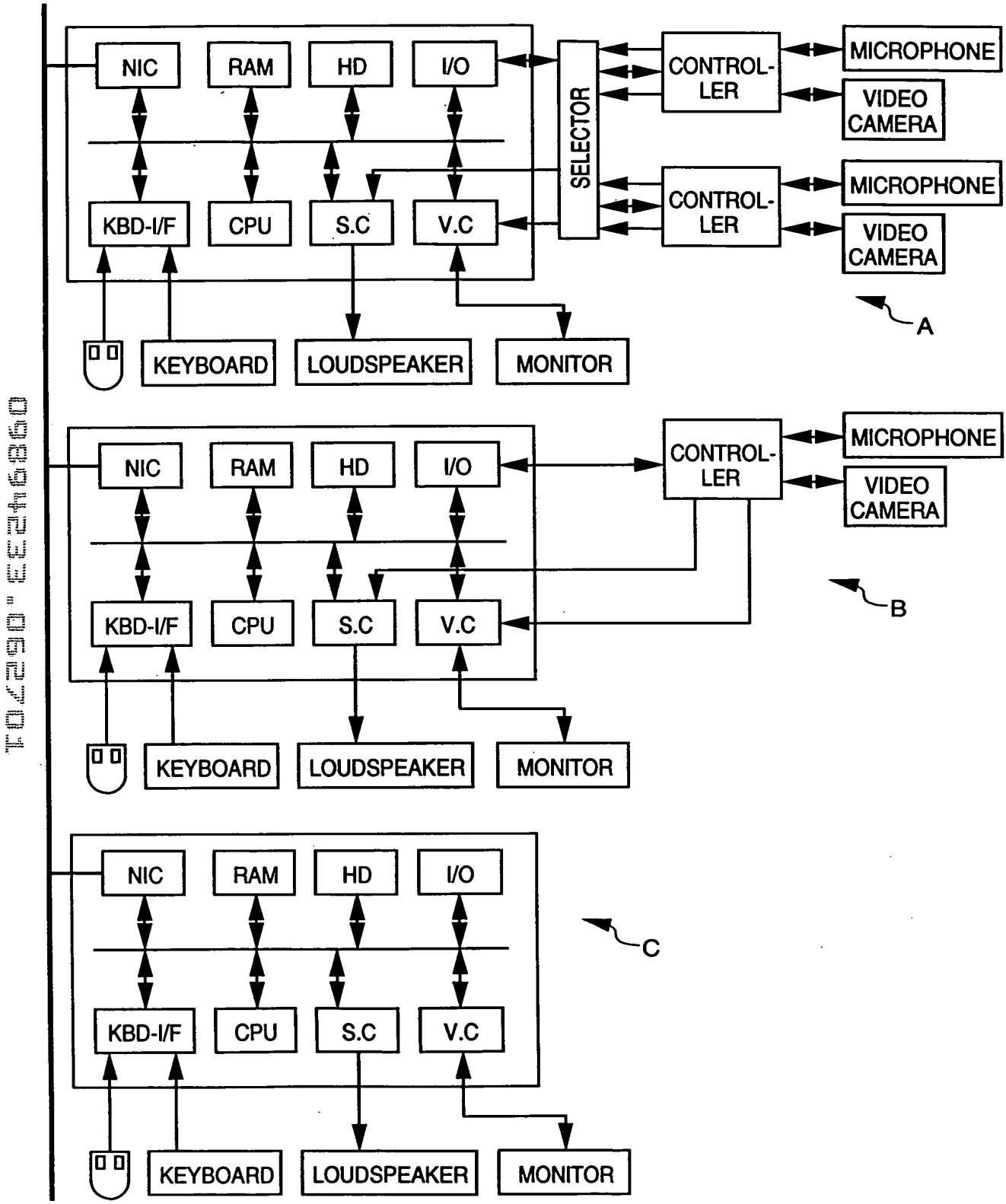

NIC
RAM
HD
I/O
SELECTOR
CONTROL-LER
MICROPHONE
VIDEO CAMERA
CONTROL-LER
MICROPHONE
VIDEO CAMERA
KBD-I/F
CPU
S.C
V.C
A
KEYBOARD
LOUDSPEAKER
MONITOR
NIC
RAM
HD
I/O
CONTROL-LER
MICROPHONE
VIDEO CAMERA
B
KBD-I/F
CPU
S.C
V.C
KEYBOARD
LOUDSPEAKER
MONITOR
NIC
RAM
HD
I/O
C
KBD-I/F
CPU
S.C
V.C
KEYBOARD
LOUDSPEAKER
MONITOR

FIG. 21

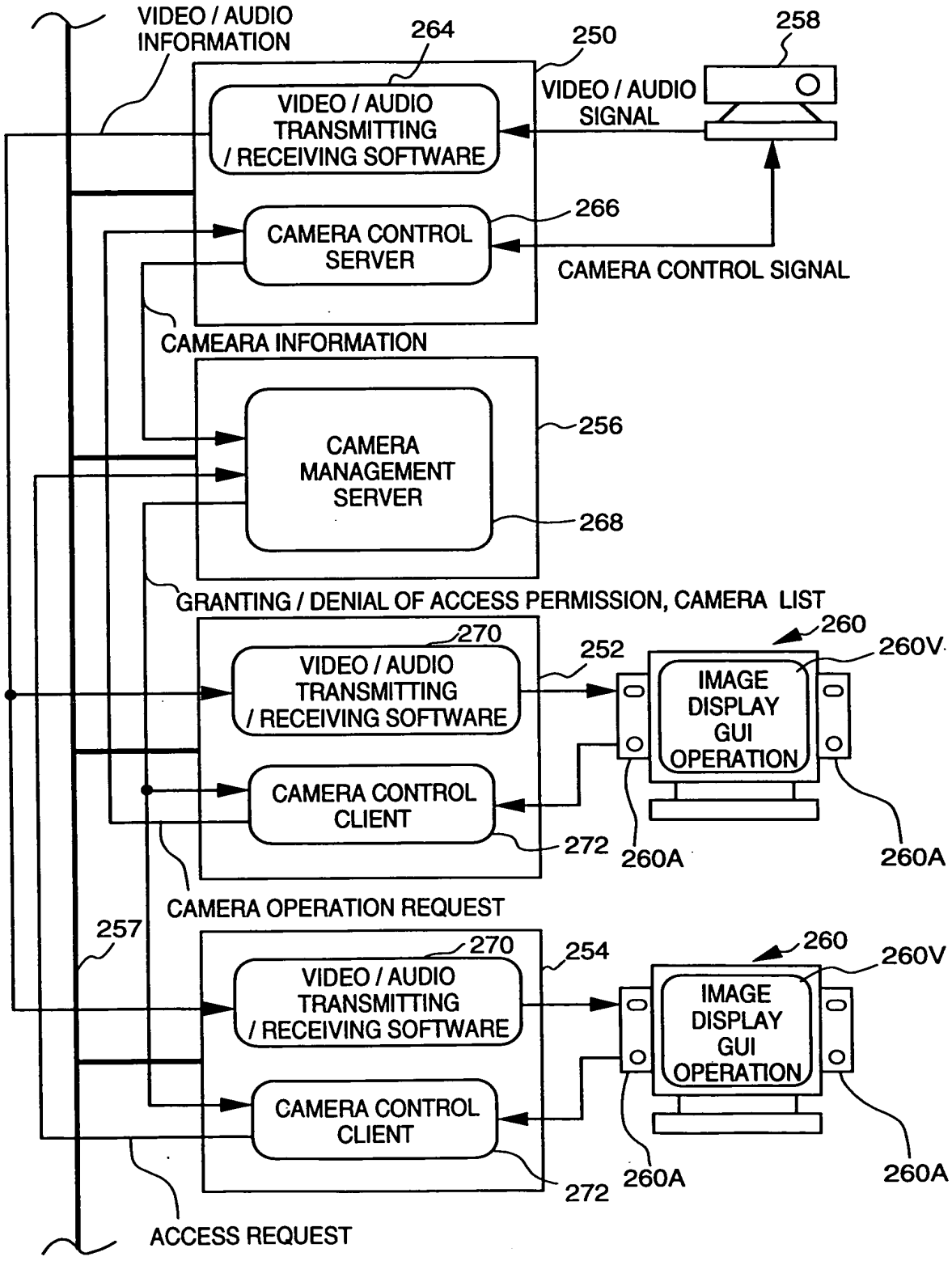
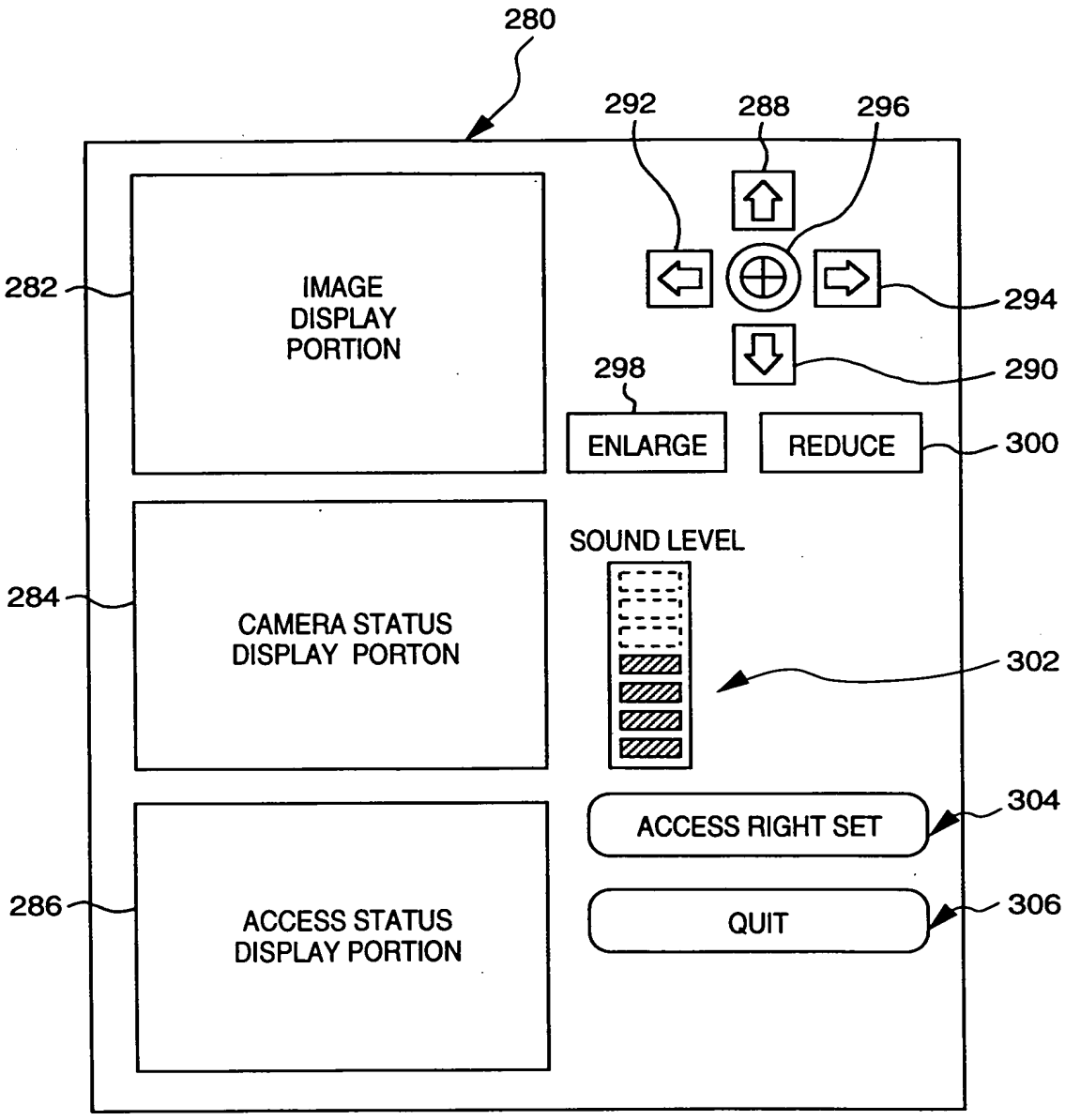

VIDEO / AUDIO INFORMATION
264
250
258
VIDEO / AUDIO TRANSMITTING / RECEIVING SOFTWARE
VIDEO / AUDIO SIGNAL
266
CAMERA CONTROL SERVER
CAMERA CONTROL SIGNAL
CAMEARA INFORMATION
256
CAMERA MANAGEMENT SERVER
268
GRANTING / DENIAL OF ACCESS PERMISSION, CAMERA LIST
270
252
260
260V
VIDEO / AUDIO TRANSMITTING / RECEIVING SOFTWARE
IMAGE DISPLAY GUI OPERATION
CAMERA CONTROL CLIENT
272
260A
260A
CAMERA OPERATION REQUEST
257
270
254
260
260V
VIDEO / AUDIO TRANSMITTING / RECEIVING SOFTWARE
IMAGE DISPLAY GUI OPERATION
CAMERA CONTROL CLIENT
272
260A
260A
ACCESS REQUEST

FIG. 22


280
292
288
296
282
IMAGE DISPLAY PORTION
294
298
290
ENLARGE
REDUCE
300
284
CAMERA STATUS DISPLAY PORTON
SOUND LEVEL
302
304
ACCESS RIGHT SET
286
ACCESS STATUS DISPLAY PORTION
QUIT
306

F I G. 23

CAMERA NAME	HOST NAME	PAN,TILT, AND ZOOM	OWNER	USE STATE	REMARKS
CAMERA 1	HOST 1	(50, 10, 30)	USER 1	USER 3	----------
CAMERA 2	HOST 1	(20, 25, 0)	USER 1	UNUSED	----------
CAMERA 3	HOST 2	(-10, -5, 0)	USER 2	UNUSED	----------
CAMERA 4	HOST 3	(30, 0, 15)	USER 4	USER 1	----------
CAMERA 5	HOST 3	(-15, 15, 50)	USER 3	UNUSED	----------
⋮	⋮	⋮	⋮	⋮	⋮

FIG. 24

USER NAME	VOICE RECEPTION	IMAGE RECEPTION	CAMERA OPERATION
USER 1	PERMITTED	PERMITTED	PERMITTED
USER 2	PERMITTED	PERMITTED	PARTIALLY PERMITTED
USER 3	PERMITTED	PERMITTED	PERMITTED
USER 4	PERMITTED	PERMITTED	INHIBITED
USER 5	INHIBITED	PERMITTED	INHIBITED
USER 6	PERMITTED	PERMITTED	INHIBITED
USER 7	INHIBITED	PERMITTED	INHIBITED
USER 8	PERMITTED	PERMITTED	PERMITTED
⋮	⋮	⋮	⋮
USER n	INHIBITED	INHIBITED	INHIBITED

FIG. 25A

USER GROUP NAME	GROUP MEMBERS
GROUP 1	USER 1 USER 3 USER 8
GROUP 2	USER 2
GROUP 3	USER 4 USER 6
GROUP 4	USER 5 USER 7
⋮	⋮
GROUP m	USER n

FIG. 25B

USER GROUP NAME	VOICE RECEPTION	IMAGE RECEPTION	CAMERA OPERATION
GROUP 1	PERMITTED	PERMITTED	PERMITTED
GROUP 2	PERMITTED	PERMITTED	PARTIALLY PERMITTED
GROUP 3	PERMITTED	PERMITTED	INHIBITED
GROUP 4	INHIBITED	PERMITTED	INHIBITED
⋮	⋮	⋮	⋮
GROUP m	INHIBITED	INHIBITED	INHIBITED

F I G. 26A

USER GROUP NAME	VOICE RECEPTION	IMAGE RECEPTION	CAMERA OPERATION
GROUP 1	PERMITTED	PERMITTED	PERMITTED
GROUP 2	PERMITTED	PERMITTED	PERMITTED
OTHERS	PERMITTED	PERMITTED	INHIBETED

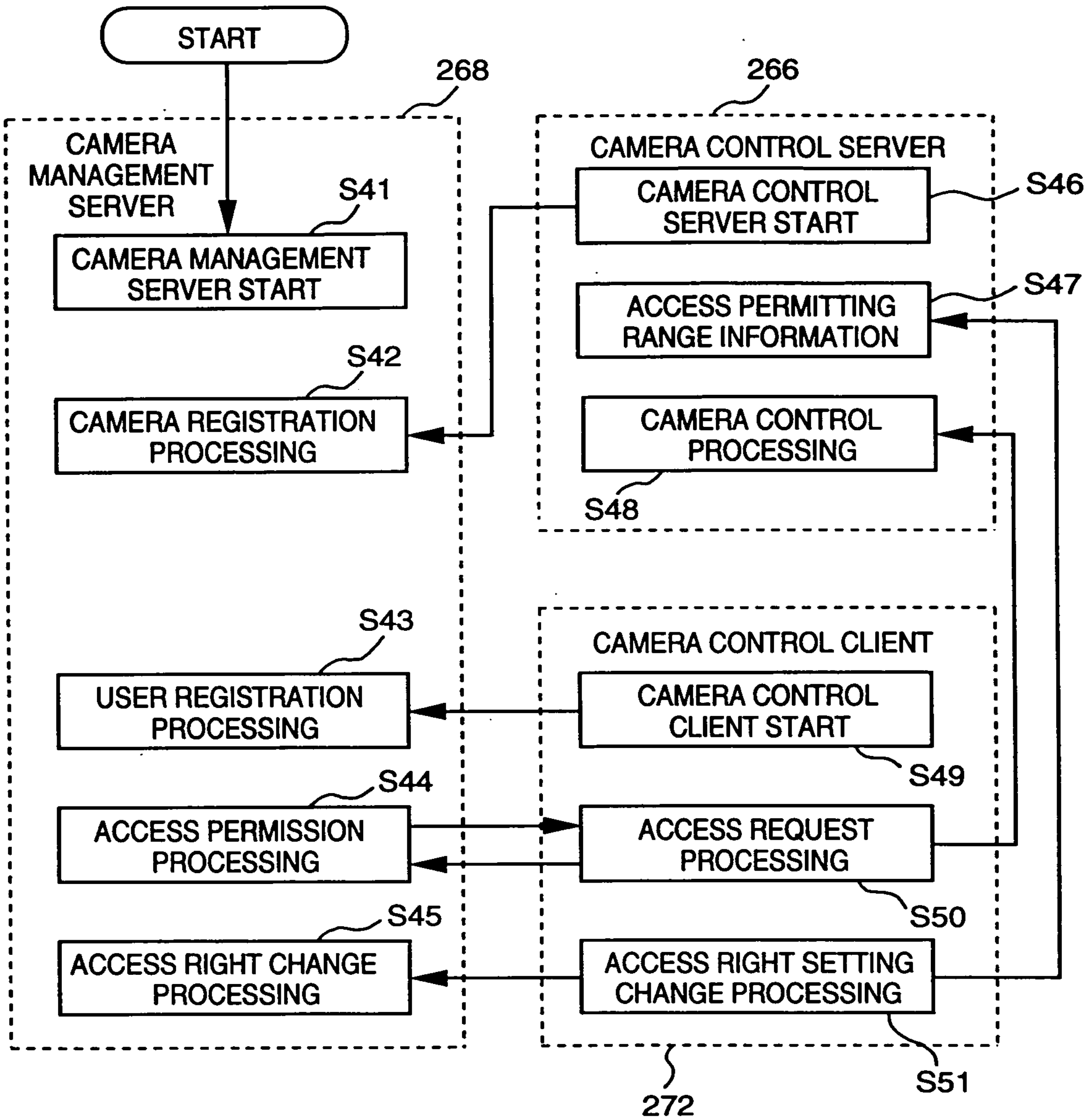
F I G. 26B

USER GROUP NAME	VOICE RECEPTION	IMAGE RECEPTION	CAMERA OPERATION
GROUP 1	PERMITTED	PERMITTED	PERMITTED
GROUP 2	PERMITTED	PERMITTED	INHIBITED
OTHERS	INHIBITED	INHIBITED	INHIBITED

F I G. 26C

USER GROUP NAME	VOICE RECEPTION	IMAGE RECEPTION	CAMERA OPERATION
GROUP 1	INHIBITED	PERMITTED	INHIBITED
GROUP 2	INHIBITED	INHIBITED	INHIBITED
OTHERS	INHIBITED	INHIBITED	INHIBITED

FIG. 27



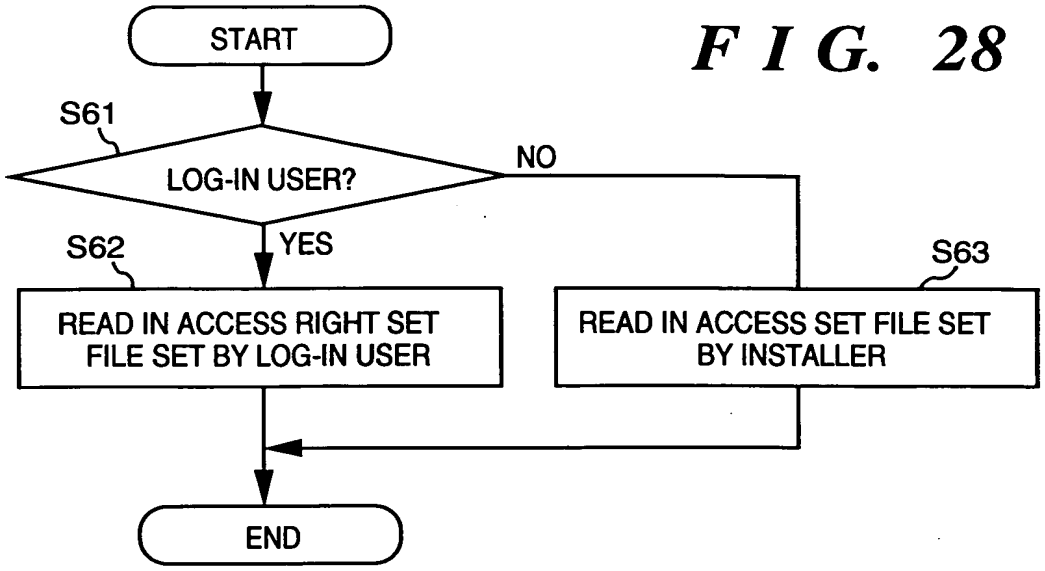


FIG. 28

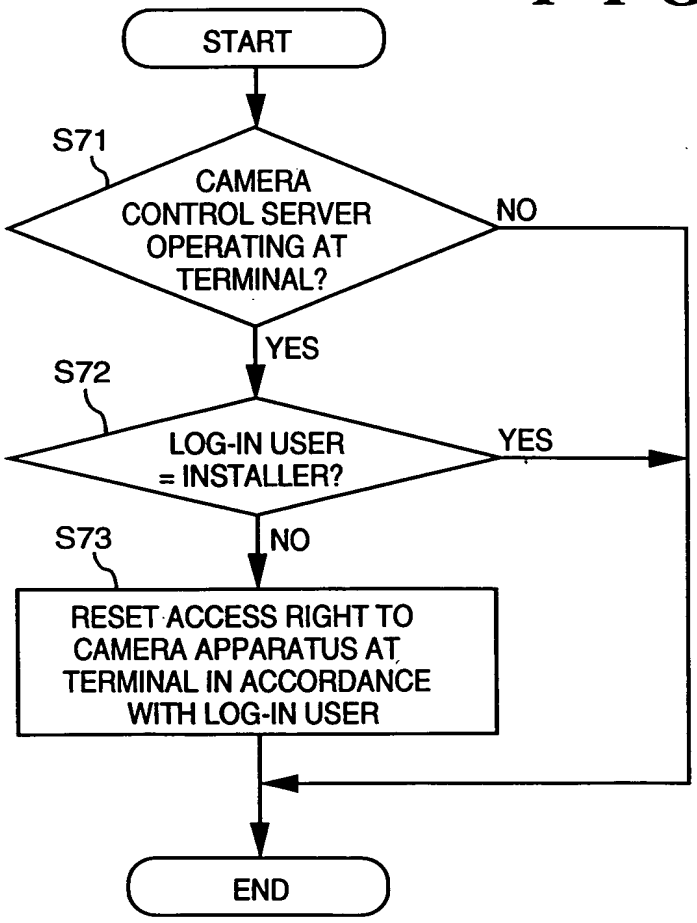


FIG. 29

FIG. 30

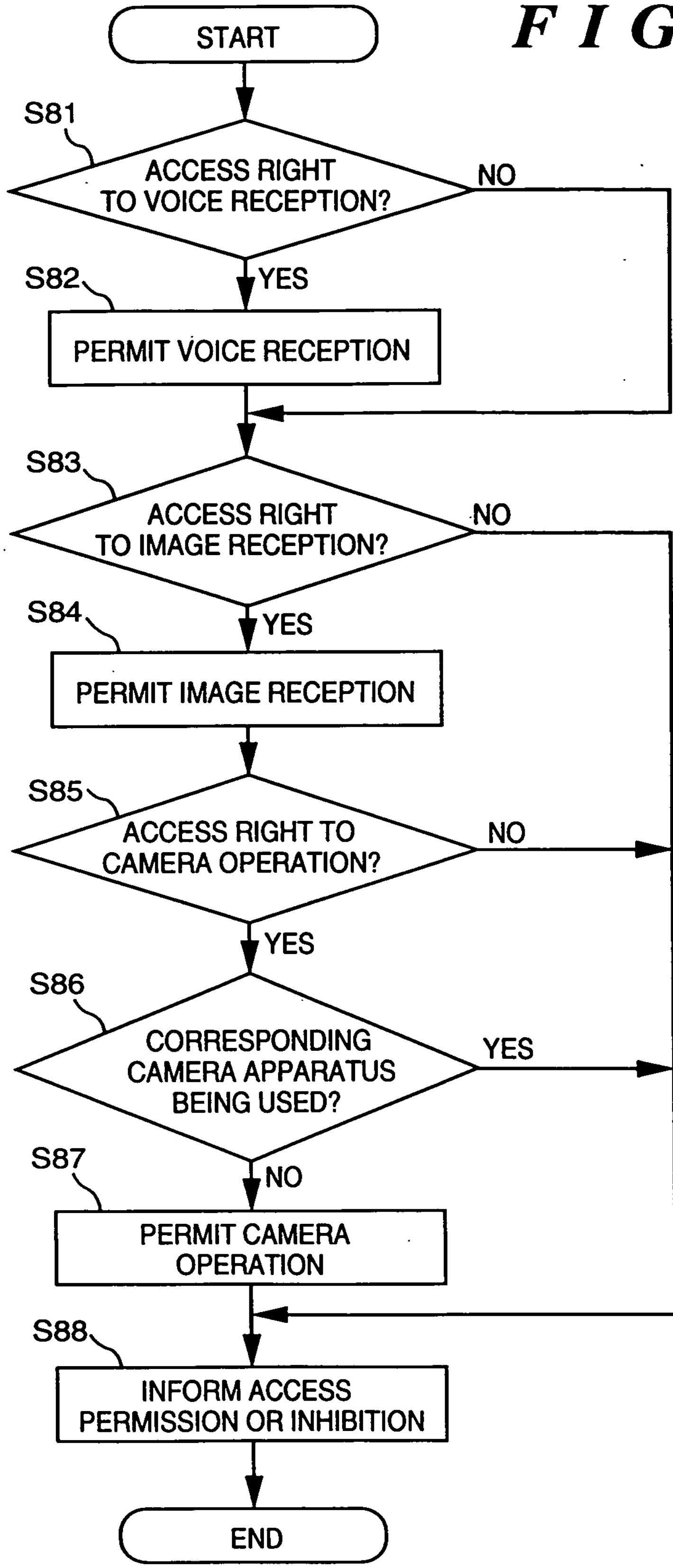
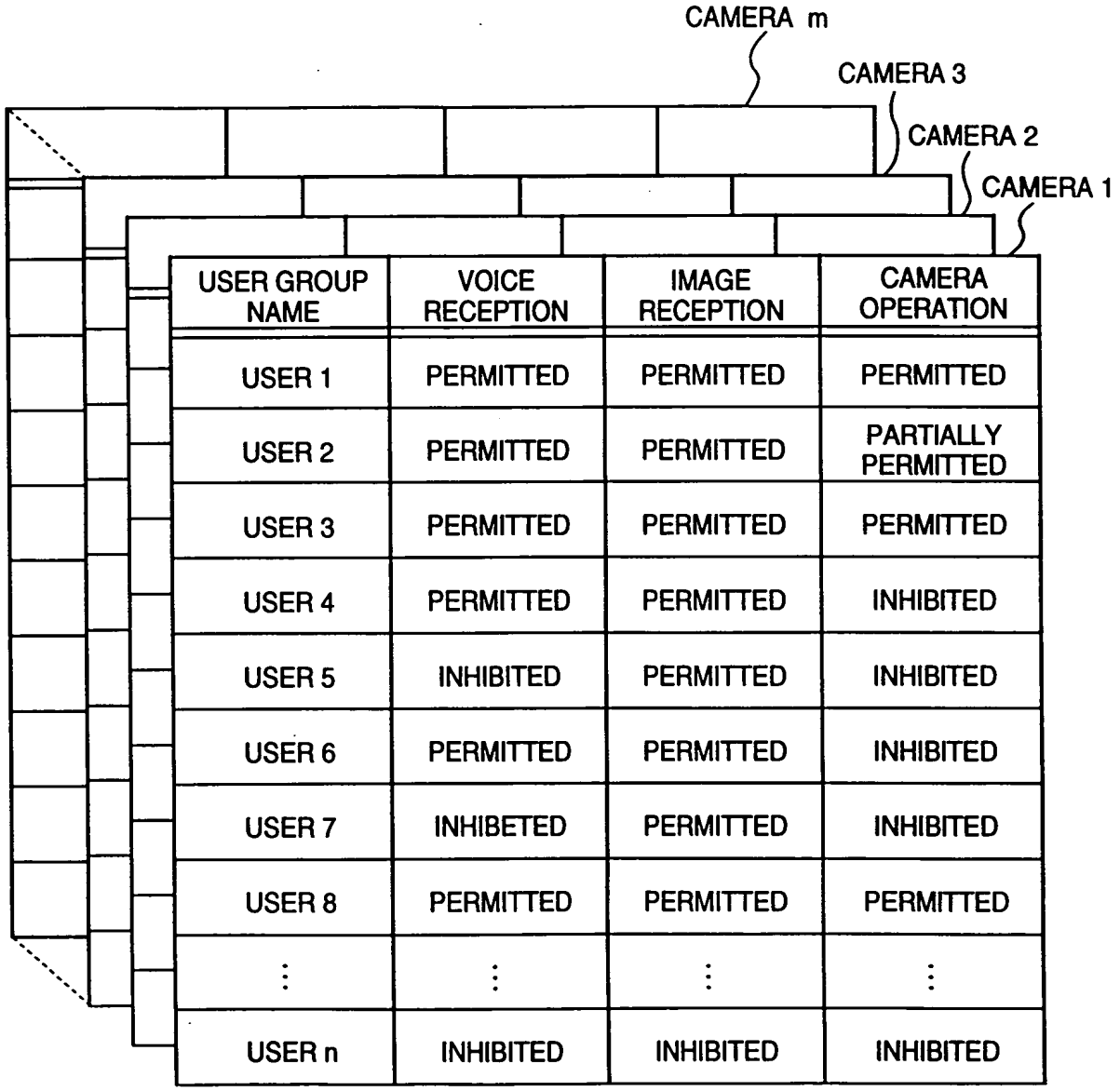


FIG. 31



USER GROUP NAME	VOICE RECEPTION	IMAGE RECEPTION	CAMERA OPERATION
USER 1	PERMITTED	PERMITTED	PERMITTED
USER 2	PERMITTED	PERMITTED	PARTIALLY PERMITTED
USER 3	PERMITTED	PERMITTED	PERMITTED
USER 4	PERMITTED	PERMITTED	INHIBITED
USER 5	INHIBITED	PERMITTED	INHIBITED
USER 6	PERMITTED	PERMITTED	INHIBITED
USER 7	INHIBETED	PERMITTED	INHIBITED
USER 8	PERMITTED	PERMITTED	PERMITTED
⋮	⋮	⋮	⋮
USER n	INHIBITED	INHIBITED	INHIBITED

FIG. 32

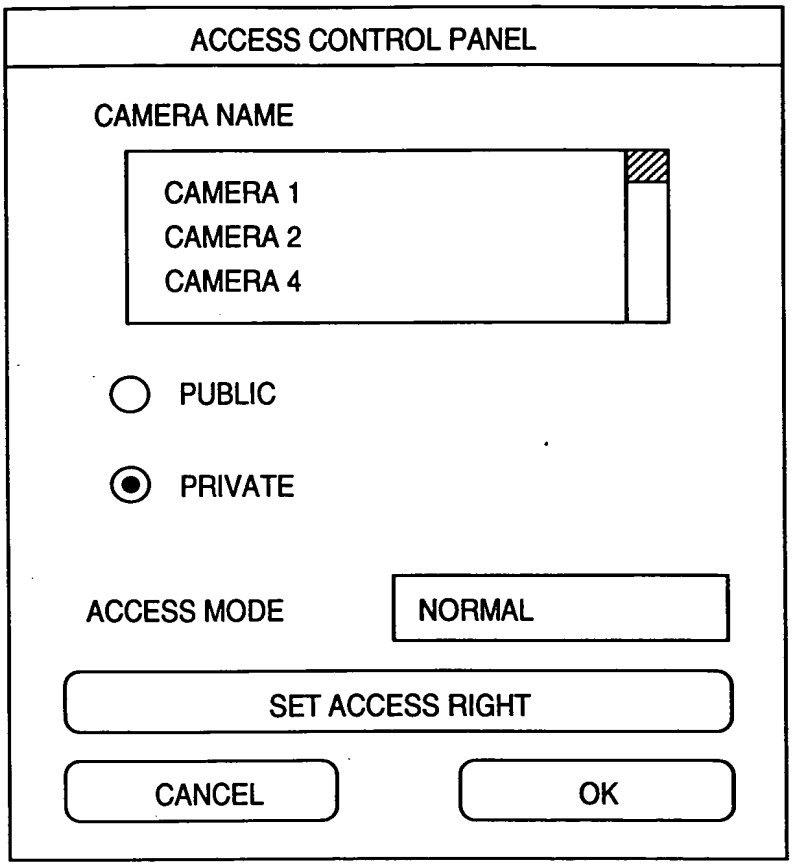


FIG. 33

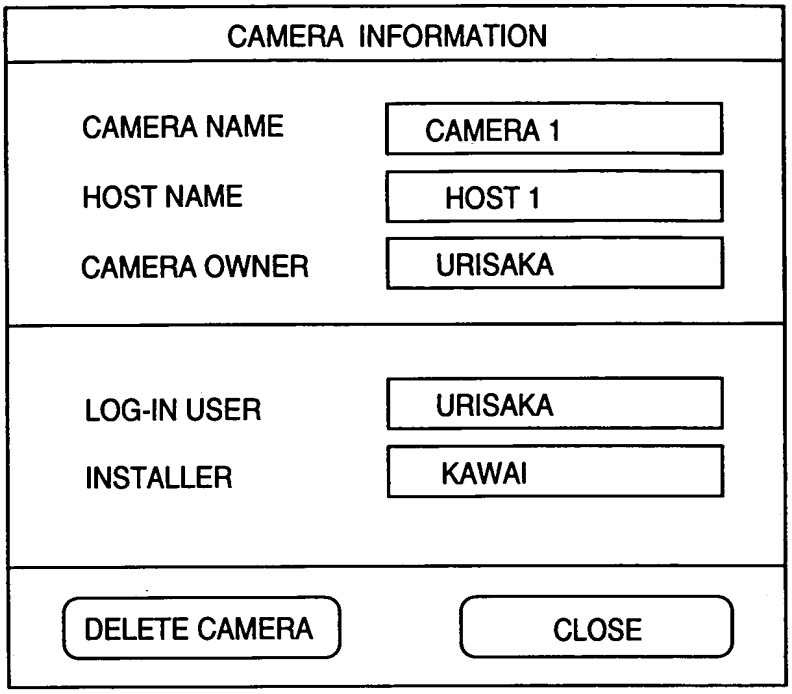


FIG. 34

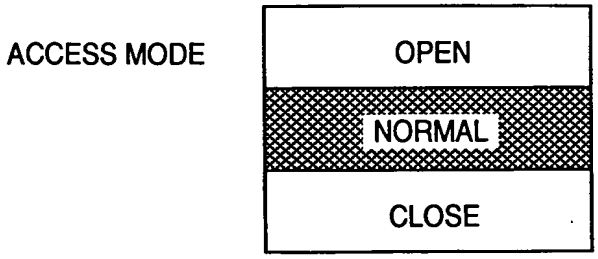


FIG. 35

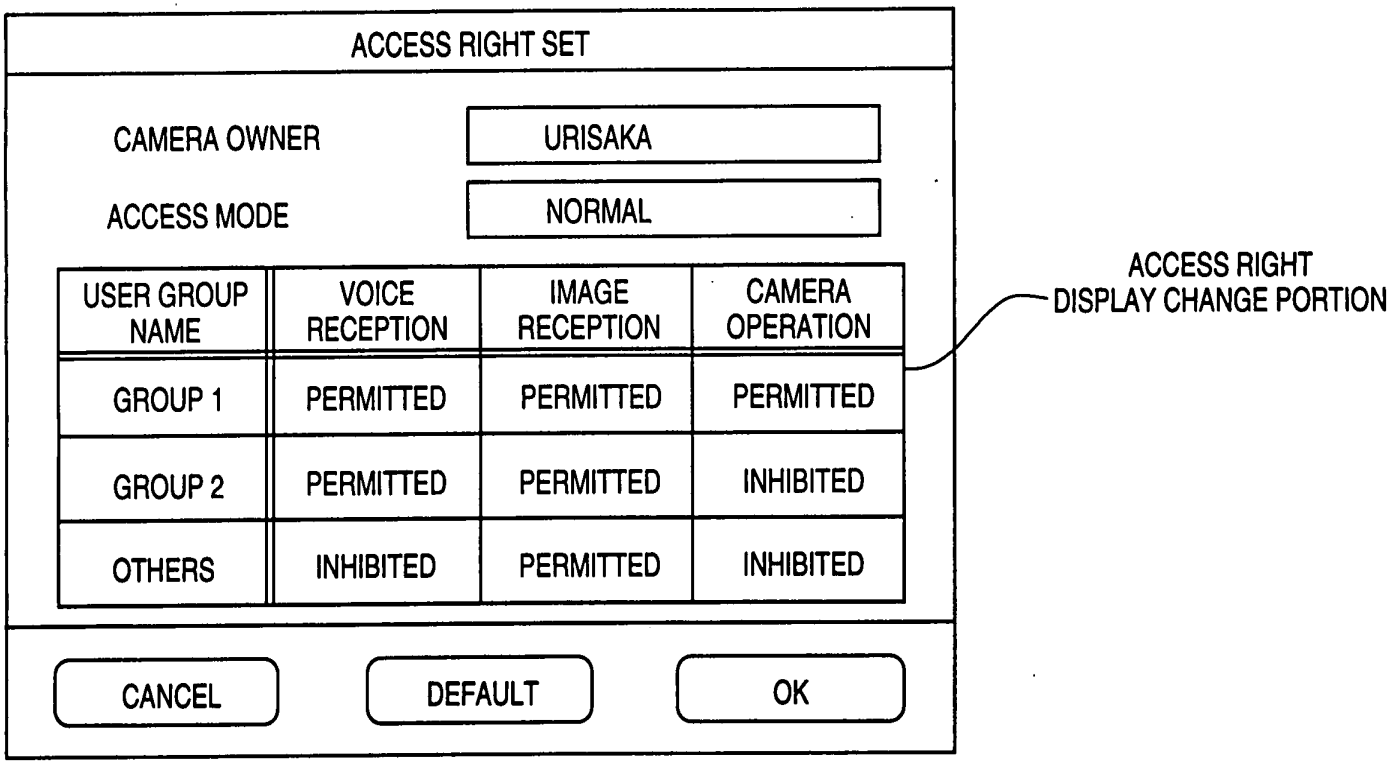


FIG. 36

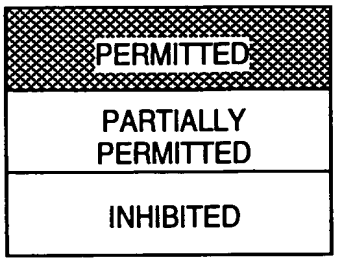
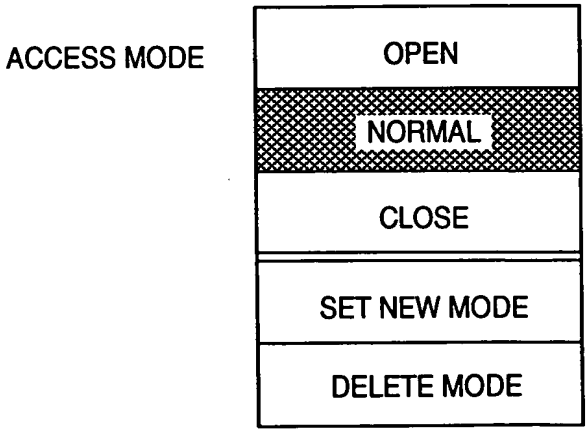
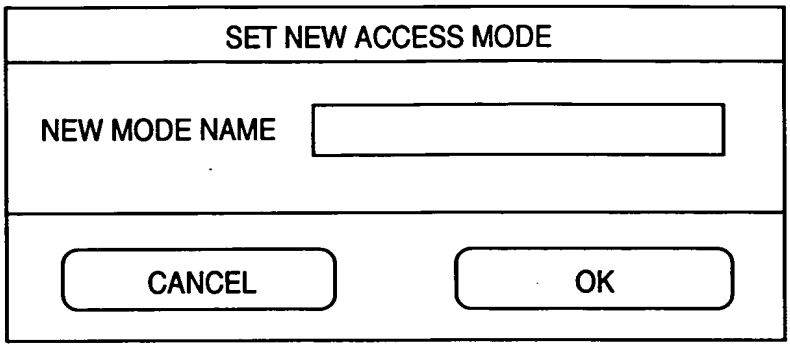


FIG. 37



F I G. 38



F I G. 39

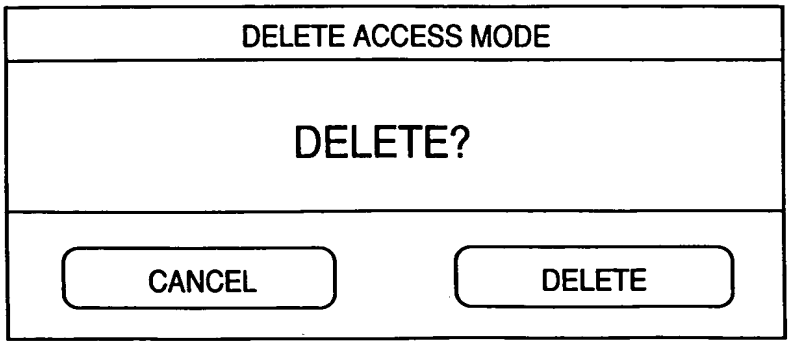


FIG. 40

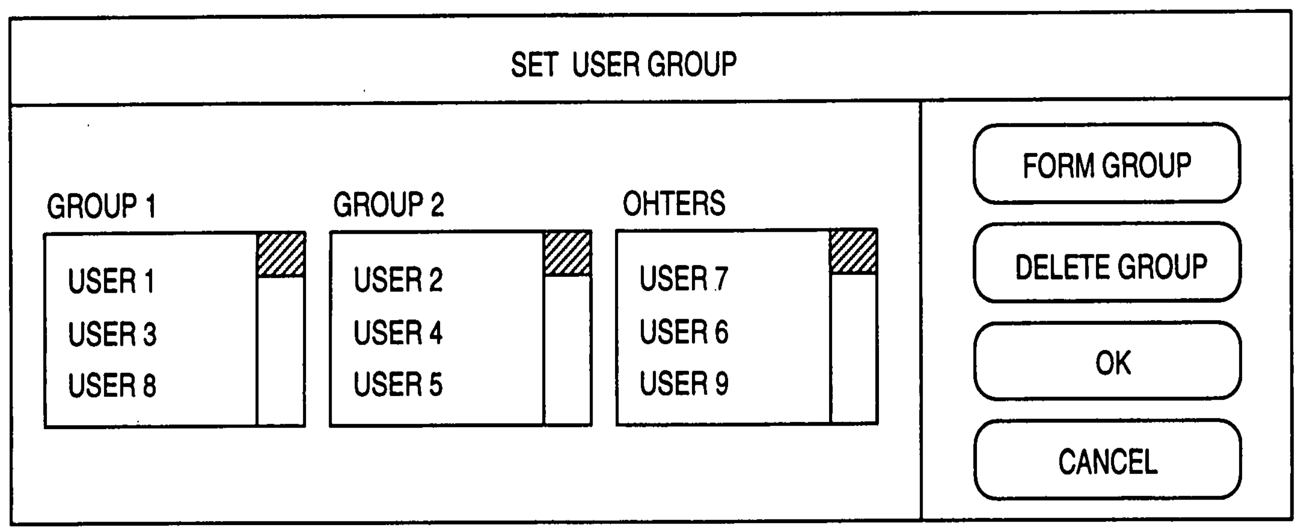

SET USER GROUP
GROUP 1
USER 1
USER 3
USER 8
GROUP 2
USER 2
USER 4
USER 5
OHTERS
USER 7
USER 6
USER 9
FORM GROUP
DELETE GROUP
OK
CANCEL

FIG. 41

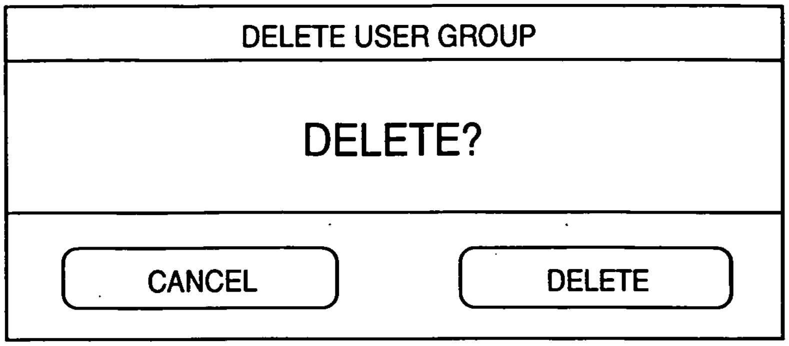


FIG. 42

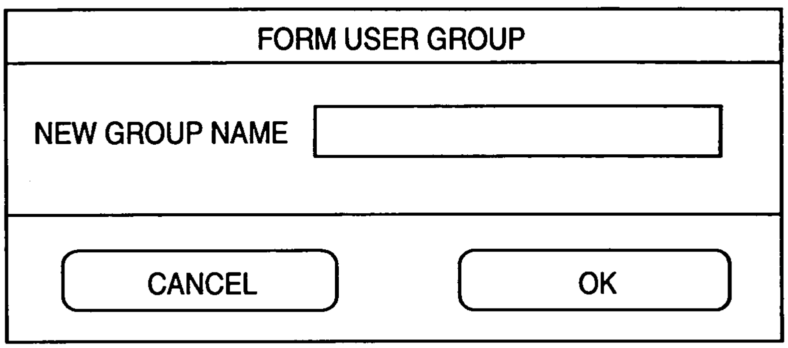


FIG. 43

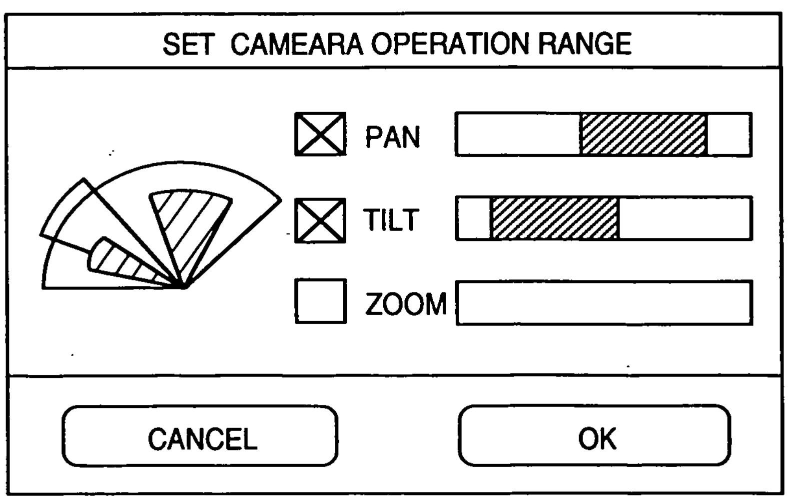


FIG. 44

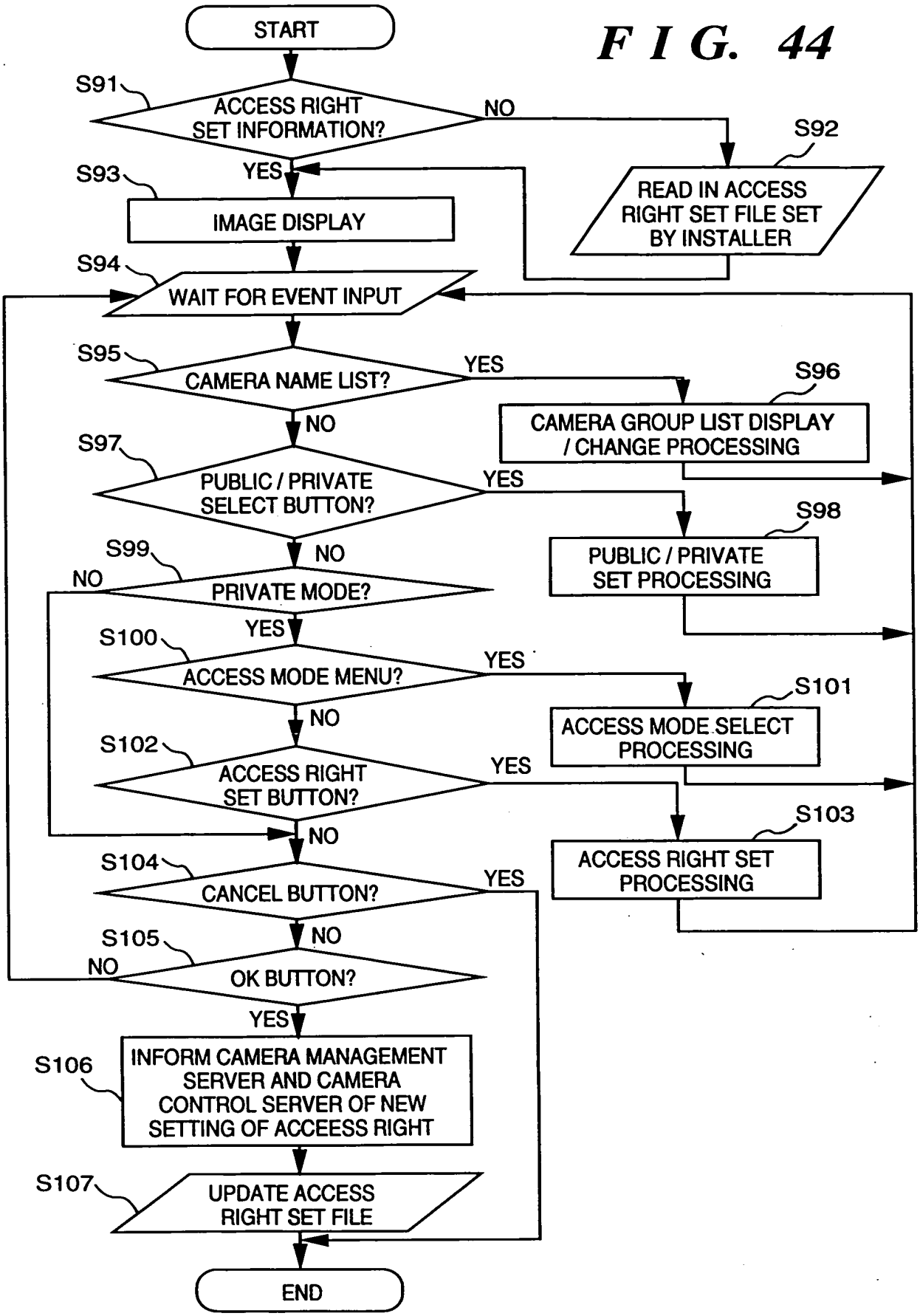
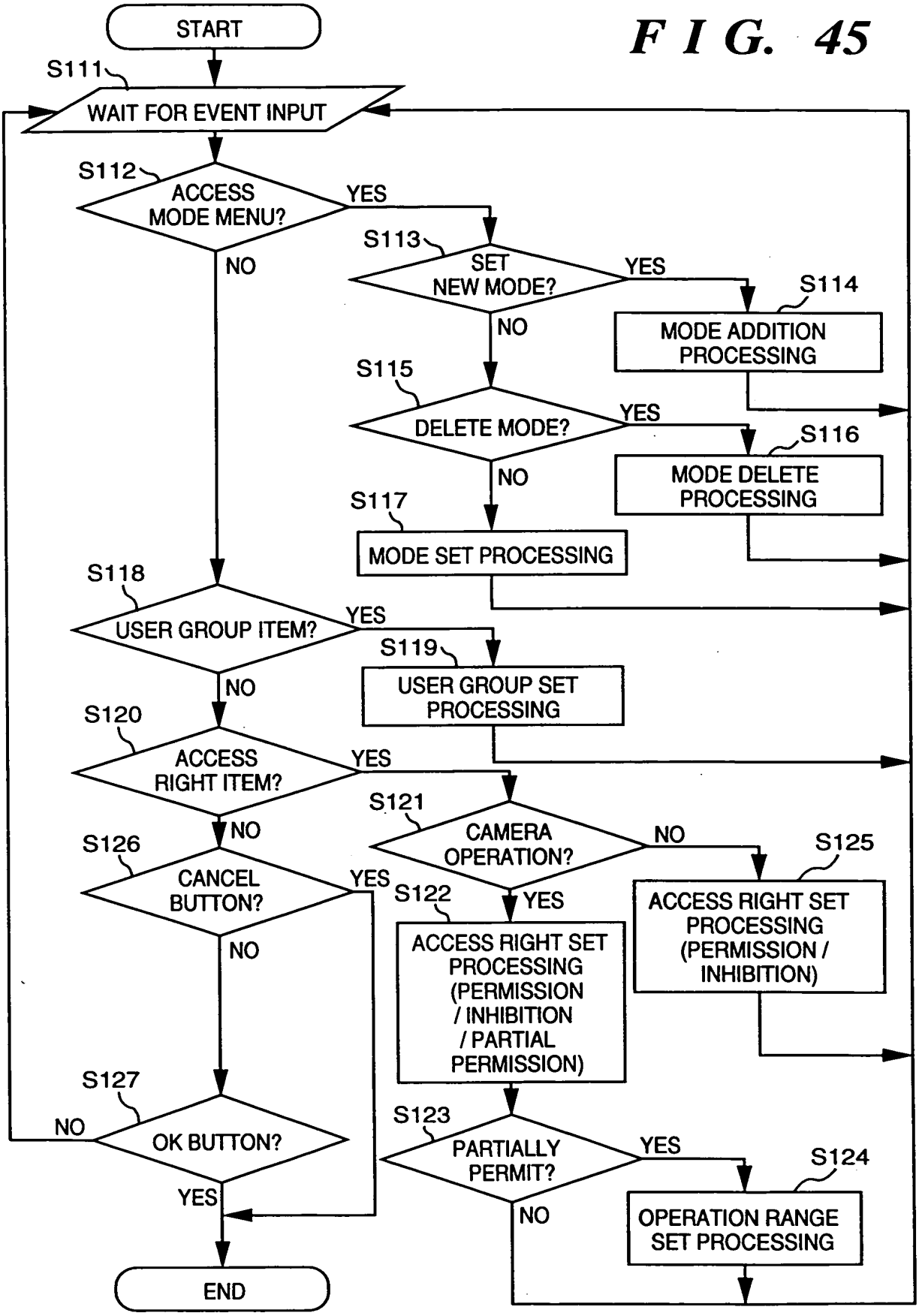


FIG. 45


START
S111
WAIT FOR EVENT INPUT
S112
ACCESS MODE MENU?
YES
NO
S113
SET NEW MODE?
YES
NO
S114
MODE ADDITION PROCESSING
S115
DELETE MODE?
YES
NO
S116
MODE DELETE PROCESSING
S117
MODE SET PROCESSING
S118
USER GROUP ITEM?
YES
NO
S119
USER GROUP SET PROCESSING
S120
ACCESS RIGHT ITEM?
YES
NO
S121
CAMERA OPERATION?
NO
YES
S125
ACCESS RIGHT SET PROCESSING (PERMISSION / INHIBITION)
S122
ACCESS RIGHT SET PROCESSING (PERMISSION / INHIBITION / PARTIAL PERMISSION)
S123
PARTIALLY PERMIT?
YES
NO
S124
OPERATION RANGE SET PROCESSING
S126
CANCEL BUTTON?
YES
NO
S127
OK BUTTON?
NO
YES
END